<u>In the Claims</u>

Please cancel claims 1-16 and add new claims 17-37 as follows:

--17.   In a data communication network, a method for selecting paths through a network, said method comprising:

identifying all of a plurality of shortest paths having equal costs from a first node to a second node;

selecting one of said plurality of shortest paths that has an edge disjoint alternate path and is thus protectable;

removing said selected shortest path from a set of paths in said network; and

adding one or more new paths to said set, said new paths extending from said first node through said second node to one or more destination nodes adjacent to said second node.

18.   The method of claim 17 further comprising:

marking said second node as having a plurality of shortest paths having equal costs.

19.   The method of claim 18 wherein selecting comprises:

examining the parent node of each of said plurality of shortest paths, and identifying said selected shortest path to be one for which the parent node has not been marked, said parent node being a last node before said second node on any selected path.

20.   The method of claim 19 further comprising:

using said set of paths in computation of a shortest path tree.

21. The method of claim 17 wherein said each of said shortest paths comprises either an individual path segment or a plurality of contiguous path segments, each of said path segments comprises an individual link or a plurality of contiguous links, and each of said link comprises a communications channel between two adjacent nodes.

22. The method of claim 17 wherein said equal costs are determined in accordance with a cost metric defined for said links of said network.

23. The method of claim 17 wherein at least one of said plurality of shortest paths was found in preceding computations in developing a shortest path tree.

24. In a data communication network, a computer program product for selecting paths through a network, said computer program product comprising:

code that identifies all of a plurality of shortest paths having equal costs from a first node to a second node;

code that selects one of said plurality of shortest paths that has an edge disjoint alternate path and is thus protectable;

code that removes said selected shortest path from a set of paths in said network;

code that adds one or more new paths to said set, said new paths extending from said first node through said second node to one or more destination nodes adjacent to said second node; and

a computer-readable storage medium that stores the codes.

25.   The computer program product of claim 24 further comprising:

code that marks said second node as having a plurality of shortest paths having equal costs.

26.   The computer program product of claim 25 wherein said code that selects comprises:

code that examines the parent node of each of said plurality of shortest paths, and identifies said selected shortest path to be one for which the parent node has not been marked, said parent node being a last node before said second node on any selected path.

27.   The computer program product of claim 26 further comprising:

code that uses said set of paths in computation of a shortest path tree.

28.   The computer program product of claim 24 wherein each of said shortest paths comprises either an individual path segment or a plurality of contiguous path segments, each of said path segments comprises an individual link or a plurality of contiguous links, and each of said links comprises a communications channel between two adjacent nodes.

29.   The computer program product of claim 24 wherein said equal costs are determined in accordance with a cost metric defined for said links of said network.

30. The computer program product of claim 24 wherein at least one of said plurality of shortest paths was found in preceding computations in developing a shortest path tree.

31. In a data communication network, apparatus for selecting paths through a network, said apparatus comprising:

means for identifying all of a plurality of shortest paths having equal costs from a first node to a second node;

means for selecting one of said plurality of shortest paths that has an edge disjoint alternate path and is thus protectable;

means for removing said selected shortest path from a set of paths in said network; and

means for adding one or more new paths to said set, said new paths extending from said first node through said second node to one or more destination nodes adjacent to said second node.

32. The apparatus of claim 31 further comprising:

means for marking said second node as having a plurality of shortest paths having equal costs.

33. The apparatus of claim 32 wherein said means for selecting comprises:

means for examining the parent node of each of said plurality of shortest paths, and identifying said selected shortest path to be one for which the parent node has not been marked, said parent node being a last node before said second node on any selected path.

34.   The apparatus of claim 33 further comprising:

using said set of paths in computation of a shortest path tree.

35.   The apparatus of claim 31 wherein said each of said shortest paths comprises either an individual path segment or a plurality of contiguous path segments, each of said path segments comprises an individual link or a plurality of contiguous links, and each of said link comprises a communications channel between two adjacent nodes.

36.   The apparatus of claim 31 wherein said equal costs are determined in accordance with a cost metric defined for said links of said network.

37.   The apparatus of claim 31 wherein at least one of said plurality of shortest paths was found in preceding computations in developing a shortest path tree.--